V. S. L. PATT

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ENTOMOLOGICAL NEWS

FEBRUARY, 1940

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ENTOMOLOGICAL NEWS

VOL. LI FEBRUARY, 1940 No. 2

The Altitudinal Range of Dragonflies in the Pikes Peak Region (Odonata).

By A. D. HESS, Instructor in Limnology, Laboratory of Limnology and Fisheries, Cornell University, Ithaca, New York.

During the summer of 1932, while assisting Dr. R. J. Gilmore in a biological survey of the streams of Pikes Peak, Colorado, the writer made an intensive study of the altitudinal range of the Anisoptera of the region. Some additional records have since been furnished by Mr. Robert Sutton of Colorado Springs, Colorado. The accompanying table is a summary of the data obtained.

The table is based primarily upon the collection of adult insects, but in many cases the nymphs also were taken. A special effort was made to obtain the nymphal stage when collecting in the upper or lower limit of the range of a particular species. The narrow range of *Aeschna juncea,* high on the side of Pikes Peak, was verified by the collection of both the nymphal and adult stages.

Most of the 26 collecting stations from which the data were obtained were located within a 25-mile radius of Pikes Peak, but considerable collecting was done in the region of Pueblo, Colorado, because of the lower altitudes available along the Arkansas River Valley.

While few conclusions can be made from a single season's observations over such a limited area, the results indicate that there are both high and low altitude stenotherms as well as eurythermous species in the anisopterous fauna of the region. There is also an indication that the distribution of the stenothermous species bears a definite relation to the life zones of the region. The location of the life zones as shown in the table is taken from the following two papers.

References:

RAMALEY, FRANCIS. 1907. Plant zones in the Rocky Mountains of Colorado. Science, N. S., vol. 26, pp. 642-643.

DODDS, G. S. and F. L. HISAW. 1925. Ecological studies of aquatic insects. IV. Altitudinal range and zonation of mayflies, stoneflies, and caddisflies in the Colorado Rockies. Ecology 6, pp. 380-390.

ALTITUDINAL RANGE OF DRAGONFLIES IN THE PIKES PEAK REGION, COLORADO.

*Tarnetrum Needham

The Life History of the Wood-Roach, Parcoblatta pennsylvanica DeGeer, (Orthoptera: Blattidae).

By PHIL RAU, Kirkwood, Missouri.

(Continued from page 9.)

DURATION OF LIFE OF THE ADULT.

In the latter part of April, 1937, I trapped several nymphs that had lived all winter in an abandoned bee-hive, and placed them in confinement. All of these became adult during the last week in May; the remaining population in the bee-hive likewise moulted into adulthood at about the same time. Notes were made on the duration of life on 21 females (Table V).

Table V.

Duration of Life of Female, Days	Frequency	Duration of Life of Female, Days	Frequency
35	1	73	2
42	1	75	3
44	2	82	2
58	1	84	1
59	1	85	2
60	2	132	1
67	1	160	1

These females lived from 35 to 85 days, with two exceptional individuals living far beyond a hundred days. The most ancient of these deposited an egg-case three days before death at 160 days.

The length of life of the adult males is considerably shorter than that of the females. In 1937 these extremely active insects escaped from confinement before data could be gathered.

MOULTING.

In 1938 and 1939, roaches both in confinement and in the old beehive became adult about the middle of May, and in 1937, about ten days later. There was however a striking difference in another lot of nymphs that emerged from four egg-cases on August 12, 1937; here, reared under artificial conditions, the mortality at various stages was about 75% and the survivors, for some unknown reason, required about 21 months to mature.

Only a few records were kept on the number of moults in the wood-roach. When the nymphs leave the egg-case, they cast off a white thin membrane [3] which apparently is a portion of the covering of the egg. The first actual moult occurred for one lot 10 to 11 days after hatching; they emerged on August 12, and moulted on August 22 and 23. The second moult for this lot occurred on September 10 to 14, or 19 to 23 days later. A third moult occurred October 2 to 4, or 22 to 26 days later, and a fourth one about December 5. There was evidently a fifth and possibly a sixth which I overlooked, which occurred between December 5 and the final moult in May. Hence it seems, from the meager data, that this species moults from five to seven times during its life.

FOOD.

We have no way of knowing what the wood-roach eats when free in nature. In confinement, they thrived on fruits and vegetables, both raw and cooked; apple, lettuce, cabbage, string beans, apricots; they also ate cheese, bread and pastry. I have seen them chew paper and card-board, and once I saw a female with her head inserted in a cell of a deserted *polistes* nest, devouring a larva.

ENEMIES.

The enemies of the wood-roach, so far as I know, seem to be few in number. The agility of both sexes makes it difficult for enemies to capture them, although I record (Entom. News, 48: 91-94, 1937) finding them in cells of the roach-hunting wasp, *Podium carolina*. Ants should be included as enemies of this species. On one occasion carpenter-ants *Camponotus pennsylvanicus* entered one of my traps and killed and carried away piecemeal about a dozen adults of both sexes. There is, however, a hymenopterous parasite that attacks the egg-case of the wood-roach. In early July, 1939, I collected seven egg-cases from the floor of the old bee-hive, one of which

[3] Probably this membrane is the "thin cuticular sheath formed during embryonic development of all insects with incomplete metamorphosis and some holometabolous species," described by Snodgrass 1935 (Principles of Insect Morphology, p. 44), and the non-cellular, chitinous pronymphal sheath shed by the newly-hatched dragonfly larva (Tillyard 1917, Biology of Dragonflies, p. 69).

gave forth, three weeks later, an evaniid parasite identified by Mr. R. A. Cushman as *Hyptia reticulata* Say. These insects, commonly known as ensign-flies, are in all species parasitic on the egg-cases of cockroaches (Comstock, Introd. to Entom. p. 933, 1924.)

A New Pagasa from the United States (Hemiptera, Nabidae).

By H. M. Harris, Ames, Iowa.

I am indebted to Mr. H. G. Barber and Professor R. H. Beamer for the privilege of making known to fellow workers the beautifully marked species described below. The uniqueness of the form was first recognized by Mr. Barber, who sent me a specimen for study in January, 1933, and who since has made repeated trips to Cape Henry in an effort to take more examples. Dr. Beamer, likewise, was struck with the distinctness of the form and at my behest made a special trip to southern Kansas in search of a longer series.

Pagasa fasciventris n. sp.

Elongate, shiny throughout, with a few fine hairs and setae. Head, anterior lobe of pronotum (except narrow collar), genital segments, and sometimes the abdominal ring preceding the genital segments, deep piceous black; the remainder of body and the legs bright reddish orange. Antennae testaceous, the base of segment I, tip of III and all of IV and V darker.

Brachypterous female: Head short, measured to collum slightly longer than broad (47:42). Vertex (16) broader than an eye. Eyes dark, nearly twice as long as broad (25:13). Ocelli reddish, small. Antennae clothed with short, fine hairs; proportion of segments, I:II:III:IV:V=14:12:45:45:43. Rostrum darkened basally, the second segment reaching only to a point about opposite basal third of eye; proportions, 35: 35:17.

Pronotum smooth and highly polished, longer than broad (70:63); the anterior lobe long (55), narrow; posterior lobe faintly impressed at the middle before base, its hind margin sinuate. Scutellum dull, the tip shiny, the disc bifoveate and the sides with a few fine long setae. Hemelytra shiny, short (50), the apex truncate and oblique, the claval veins and the

inner vein of corium paralleled by rows of coarse punctures, the membrane very minute and deflexed (hemelytra sometimes longer, with membrane more greatly developed). Anterior femora stout, as seen from the side the length beyond apex of trochanter two-and-a-half times the greatest depth (55:21), the inner surface armed with rows of piceous, spine-like teeth along the distal three-fifths and with a few scattered granules toward the base. Anterior tibia with inner margin nearly straight, the length of apical fossa equal to diameter of femur. Posterior tibia clothed with short, fine almost recumbent hairs and with semi-erect setae.

Abdomen above coarsely punctate across the segments. Connexium semi-vertical.

Winged form: Pronotum shorter than width across the base (70:75), the posterior margin deeply sinuate at the middle. Hemelytra abbreviated, tapering posteriorly from the middle, the clavus and corium with scattered punctures, strongly shiny, the embolium less strongly so; cuneal fracture obsolete; membrane smoky, somewhat opaque, longer than pronotum, broadly rounded to apex, the veins distinct.

Length 5.7-6.0 mm. Width (pronotum) 1.26-1.50 mm; (abdomen) 1.50-2.0 mm.

Holotype: apterous female, Cape Henry, VIRGINIA, Sept. 12, 1932, H. G. Barber collector (in U. S. National Museum). *Morphotype*, winged female, Cape Henry, Virginia, June 25, 1932, H. G. Barber (U. S. National Museum). *Paratypes*: brachypterous female, Falls City, NEBRASKA, August, 1930, H. G. Barber; 2 brachypterous females, Cherokee County, KANSAS, August 31, 1939, R. H. Beamer, and 2 brachypterous females, Cherokee County, Kansas, September 6, 1939, R. H. Beamer (in collections of University of Kansas, H. G. Barber, and H. M. Harris).

This species belongs to the subgenus *Lampropagasa*. It differs from *P. fusca* in (1) color, (2) more elongate and narrow body, (3) fewer and finer hairs, with no long ones on legs, (4) smaller scutellum, (5) less incrassate front femora, which have fewer teeth, (6) the anterior tibiae are more nearly straight along their inner edge, and (7) the ostiolar canal has a more broadly rounded apex.

In addition to the type series there are at hand five late

instar nymphs taken by Dr. Beamer on August 31. They have the same striking color as the adults. In one of the Kansas females the hemelytra are somewhat intermediate in development, being as long as the entire pronotum and having a distinct, but small membrane.

A List of Maryland Odonata.

By ELIZABETH G. FISHER.
Academy of Natural Sciences, Philadelphia.

A collection of dragonflies made by the author contained some new distribution records for the state of Maryland; therefore a list of the collection seemed to be of interest. The collection was made mainly around Baltimore, but other places in the state where I have made collections are included for completeness.

I have given below a short description of some of the collecting stations:

In Baltimore City:

Roland Park—polluted streams.

Govans at Woodburne Ave.—a spring fed pond and small marsh.

Mt. Washington at Cross Country Blvd.—tiny swamp and pond in woods.

In Baltimore County:

Piney Creek near Bacon Hill—a meadow with brook and small marsh.

Pretty Boy—city reservoir and large woodland stream.

Shawan—a meadow brook.

Beaver Dam Stream—a clear woodland stream.

"The Caves", Eccleston—old ore bank.

"Soldier's Delight", Delight—a serpentine barren area with clear brooks.

Avolon—Potapsco River.

Dead Run near Colonial Park and Woodlawn—a sluggish stream.

Lock Raven—city reservoir and steams draining into it. Cromwell Bridge is on its large fluctuating outlet.

Lake Roland—artificial lake.

In Harford County:

Bush River—estuary of Chesapeake Bay.

In Frederick County:

Ridgeville—a marshy meadow.

Frederick—goldfish ponds.

In Anne Arundel County:

Swan Creek—salt marsh near Ft. Armstead.

Lakeshore—pitcher plant bog.

Waterford—old mill pond.

South River—at head of tidal water.

In Calvert County:

Governor's Run-beach with seepage from cliffs and small wooded ravines cutting through the cliffs.

In Kent County:

East Neck Island—a salt marsh.

Species recorded by other authors are listed for completeness. The author and date of publication alone are given within square brackets, the full reference being obtainable from the Zoological Record; the locality and the date from the original.

The number and sex of the specimens taken is shown below except for the commonest species which are represented by numerous specimens of both sexes, the word "common" referring to ten to twenty-five individuals captured, "very common" referring to any number above twenty-five. In the case of a few species, which are difficult to capture or rarely seen but easily recognized on the wing, I have included additional localities where I have seen the species but have not captured them; these are always listed as "seen" and further set apart by round brackets. Widely distributed and extremely common species are listed without specific localities (as *Agrion maculatum, Plathemis lydia, Ischnura verticalis* etc.).

Family Aeshnidae.

Petalurinae.

1. Tachopteryx thoreyi (Hagen). Beaver Dam Stream near Cockeysville, Baltimore Co., July 23, 1 ♂; Governor's Run, Calvert Co., July 7, 1 ♂; (seen Octoraro Creek, Cecil

Co., June 17 and Pretty Boy, Baltimore Co., June 20.) [See Hagen 1861, 1875, Banks 1892, Calvert 1893.]

The following notes were taken near Ithaca, New York, but indicate a characteristic habit of this species:

"We found this species in large numbers in Coy Glen, a deeply wooded narrow gorge. Males and females coursed up and down the gorge bottom, usually just above the level of our heads. They rested on the tree trunks where they were almost completely camouflaged. We soon learned where several favorite resting spots were and thus we were able to distinguish them from their surroundings. They would flatten their wings and abdomens against the tree and remain motionless while we quickly swung the net over them. Often the net would sweep right over them without disturbing them because they were so closely pressed to the tree and seemed to rely so implicitly on their camouflage."

Gomphinae.

2. HAGENIUS BREVISTYLUS Selys. Dead Run, Colonial Park, Baltimore Co., July 18, 1 ♂; (seen Shawan, Baltimore Co., June 8). [See Hagen 1875, Banks 1892, Calvert 1893.]

3. OPHIOGOMPHUS MAINENSIS Packard, Shawan, Baltimore Co., June 6-8, 9 ♂.

This is the southernmost record for this species. The males rested on grasses and reeds that directly overhung the water of a clear meadow brook. They were absent at this locality when revisited on July 14.

4. GOMPHUS (GOMPHURUS) PARVIDENS Currie. [See Currie 1917.]

5. G. (GOMPHURUS) VASTUS Walsh. [See Hagen 1875, Banks 1892.]

6. G. (STYLURUS) PLAGIATUS (Selys). [See Hagen 1875, Banks 1892, Calvert 1893.]

7. G. (GOMPHUS) GRASILINELLUS Walsh. [See Muttkowski 1910.]

8. G. (GOMPHUS) EXILIS Selys. Dead Run, Colonial Park, Baltimore Co., June 4, 2 ♂ and 2 ♀. [See Hagen 1861, 1875, Banks 1892, Calvert 1893.]

In copulation June 4, resting on rocks in midstream or in the field.

9. G. (ARIGOMPHUS) VILLOSIPES Selys. Bush River, Harford Co., June 3, 1 ♂ ; (others seen resting on bare rocks, logs, etc.)

This is a new state record.

Aeshninae.

10. GOMPHAESCHNA FURCILLATA ANTILOPE (Hagen). [See Hagen 1874, 1875, Banks 1892, Calvert 1893.]

11. BASIAESCHNA JANATA (Say). South River, Anne Arundel Co., May 6, 10 ♂.

A female, unaccompanied by the male, was seen laying eggs on the submerged stems of the Arrow Arum. The males were coursing up and down the edge of the open water in a marsh at the head of tidal water, several individuals following the same beat. Absent at this locality on July 1.

12. BOYERIA VINOSA (Say). Beaver Dam Stream, Cockeysville, Baltimore Co., July 22, 2 ♂ ; "Soldier's Delight", Delight, Baltimore Co., Sept. 25, 3 ♂ ; (seen on wooded hill top at Long Green Run, Hartley, Baltimore Co., July 20.) [See Hagen 1861, 1875.]

These dragonflies were taken resting on rocks and trees.

13. ANAX JUNIUS (Drury). Common about practically all ponds and lakes or foraging over meadows, May 6—Oct. [See Hagen 1861, 1875.]

14. A. LONGIPES Hagen. [See Hagen 1890, Banks 1892, Calvert 1893.]

15. EPIAESCHNA HEROS (Fabricius). "Soldier's Delight", Baltimore Co., July 1, 1 nymph; Roland Park, Baltimore City, May 2, 1 ♀, and July 9, 1 nymph. [See Hagen 1861, 1875.]

16. AESHNA UMBROSA Walker. "Soldier's Delight", Delight, Baltimore Co., Sept. 25, 1 ♂, 1 ♀ ; Lake Roland, Baltimore Co., Sept. 24, 1 ♀. [See Walker 1912.]

17. AE. VERTICALIS Hagen. [See Walker 1912.]

Cordulegasterinae.

18. CORDULEGASTER DIASTATOPS (Selys). Piney Creek near Bacon Hill, Baltimore Co., June 6, 1 ♂ ; Shawan, Baltimore Co., July 1, 1 ♂ ; Govans at Woodburne Ave., Baltimore City, June 11, 2 ♂.

In marshy meadow land.

19. C. SAYI Selys. [See Hagen 1874, 1875, Banks 1892.]

20. C. MACULATUS Selys. [See Hagen 1861, 1874, 1875, Banks 1892, Calvert 1893.]

Family LIBELLULIDAE.

Macromiinae.

21. MACROMIA ILLINOIENSIS Walsh. Cromwell Bridge, Lock Raven, Baltimore Co., July 7, 1 ♀. Big Paint Creek, Montgomery Co., Sept. 2, 1 nymph.

22. M. TAENIOLATA Rambur. [See Hagen 1861, Banks 1892, Calvert 1893.]

Cordulinae.

23. EPICORDULIA PRINCEPS (Hagen). Otter Pt. near Abington, Harford Co., May 21, exuviae very common, 1 ♂, 1 ♀. [See Hagen 1861, 1874, 1875, Calvert 1893.]

Hundreds of exuviae were found among the water weeds washed up in the strand line. The nymphs were inhabitants of partially brackish water in this vicinity. No exuviae were found here on May 7.

24. TETRAGONEURIA CYNOSURA (Say). Rockland, Baltimore Co., June 15, 25 exuviae, 3 ♂, 2 ♀; Moore's Branch, Green Spring Ave., Baltimore Co., June 18, 2 ♂; (seen Notch Cliff, Baltimore Co., June 22; Lake Roland, Baltimore Co., May 25—July) [See Hagen 1875.]

Females were seen flying June 15 with large masses of eggs on the tips of their abdomens.

25. SOMATOCHLORA TENEBROSA (Say). [See Hagen 1875, Banks 1892.]

26. S. FILOSA (Hagen). [See Hagen 1874, 1875, Banks 1892, Calvert 1893.]

27. S. ELONGATA (Scudder). [See Walker 1925.]

28. DOROCORDULIA LEPIDA (Hagen). [See Hagen 1875, Banks 1892, Calvert 1893.]

Libellulinae.

29. NANNOTHEMIS BELLA (Uhler). Lakeshore, Anne Arundel Co., June 19. July 16, Aug. 4, very common. [See Uhler 1857, Hagen 1861, 1875, Banks 1892.]

This locality is a pitcher plant bog. Eggs were being laid June 19.

30. PERITHEMIS DOMITIA TENERA (Say). Moore's Branch, Green Spring Ave., Baltimore Co., July 11, 1 ♂; Dead Run, Colonial Park, Baltimore Co., July 9, 1 ♀; (seen Lake Roland,

Baltimore Co., June-July.) [See Hagen 1861, 1875, Ris 1903, 1910.]

31. CELITHEMIS EPONINA (Drury). Swan Creek, Anne Arundel Co., June 19, 2♂, 1♀; Eliot's Island, Dorchester Co., Aug. 24, 1♀. [See Hagen 1861, 1875, Ris 1903, 1912.] In copulation June 19.

32. C. ELISA (Hagen). "Soldier's Delight", Baltimore Co., Sept. 11, 1♂; Swan Creek, Anne Arundel Co., June 19, 4♂, 2♀; Lakeshore, Anne Arundel Co., June 19, Aug. 4, 3♂; "Crimea", Baltimore City, June 4, 1♀. [See Hagen 1875.]

33. C. MARTHA Williamson. Lakeshore, Anne Arundel Co., Aug. 4, 2♂. [See Williamson 1922.]

34. ERYTHRODIPLAX MINUSCULA (Rambur). Lakeshore, Anne Arundel Co., Sept. 22, 2♂.

This is the northernmost record for this species, hitherto known north as far as Kentucky and North Carolina. The locality is a pitcher plant bog.

35. E. BERENICE (Drury). East Neck Island, Kent Co., May 28-Sept. 18, very common; Governor's Run, Calvert Co., July 7, 2♂; Eliot's Island, Dorchester Co., Aug. 24, very common. [See Drury 1770, Hagen 1861, 1875, Banks 1892, Ris 1903, 1911, Shortess 1929.]

This species is very common about brackish water. Many specimens could be swept into a net with each stroke at Eliot's Island.

36. LIBELLULA LUCTUOSA Burmeister. Common about most ponds, June-August. [See Hagen 1861, 1875, Banks 1892, Ris 1910.]

37. L. AURIPENNIS Burmeister. Linthecium, Anne Arundel Co., July 5, 1♂; Lakeshore, Anne Arundel Co., August 4, 1♂, (many seen); East Neck Island, Kent Co., July-August, common. [See Hagen 1861, 1875, Ris 1903, 1911, Calvert 1903.]

This species is commonly seen on the coastal plain but is apparently absent above the Fall Line.

38. L. CYANEA Fabricius, "The Caves", Baltimore Co., July 3, 2♂; Swan Creek, Anne Arundel Co., June 19, 2♂; East Neck Island, Kent Co., Aug. 25, 1♂; Gray's Swamp, Calvert Co., May 27, 1♂. (Seen Govans, Baltimore City, July 10.) [See Uhler 1857, Hagen 1861, 1875, Banks 1892, Calvert 1903, Ris 1910.]

(To be continued.)

Schistocerca americana (Drury) Unusually Abundant in Southern New Jersey during the autumn of 1939. (Orthoptera: Acrididae).

By Henry Fox, Cape May Court House, New Jersey.

The large southern bird grasshopper, *Schistocerca americana* (Drury), is normally very scarce in southern New Jersey, most of its reported occurrences in the section pertaining to single individuals met with sporadically at more or less widely scattered points. These were doubtless stray migrants which had wandered northward from the general breeding range of the species in the South. It is only on the coastal barrier-beach islands of the lower half of Cape May County that *S. americana* has been found with sufficient regularity to render probable its permanent residence within the geographic limits of the State, and even in that highly restricted section it has always been considered scarce.

In startling contrast with its usual scarcity, was the abundance and apparently wide distribution of *S. americana* in southern New Jersey during the autumn of the year 1939. At least, this was the condition observed in the section of Cape May County where the writer's home is located. Throughout October and during most of November adults of both sexes were seen almost daily at Ocean View. Here, as well as elsewhere, they were partial to old neglected fields and woodland clearings where *Andropogon* grasses and scattered bayberry bushes formed the predominant plant cover. It was no uncommon occurrence to flush from two to a dozen individuals in rambling casually across a field of moderate size. On one occasion a search of eight hours in a tract of about seven acres revealed thirty-three. The same tract had been frequently examined for Orthoptera in other years without disclosing a single example of *S. americana*, although in the late autumn of 1938 two individuals had been flushed in other tracts in the immediate vicinity.

Other localities in Cape May County where the species occurred in the same autumn about as abundantly as at Ocean

View, included Sea Isle City, South Seaville, Sea Isle Junction*, Clermont and Court House. No observations were made at other points in the County.

On October 19 two adults of *S. americana* were accidentally flushed from some roadside weeds near Merchantville, Camden County. Doubtless others could have been found had the writer been suitably clothed for field work at the time. This occurrence in a section far removed from Cape May County obviously points to the wide distribution of the species throughout southern New Jersey. That this was the case is also indicated by information received from Mr. J. A. G. Rehn (*in litt.*), who wrote that he had been lately asked by inquirers about a large grasshopper recently seen (presumably near Philadelphia) and which from their description was clearly the present species.

The phenomenal increase and apparently wide diffusion of *S. americana* in southern New Jersey during the autumn of 1939 can be explained as due to an expansion of the resident popualtion of the coastal islands of Cape May County, or as resulting from the invasion of the State by a swarm originating farther south in the general breeding range of the species. The former is rendered improbable by the fact that no clearly indicated increase in the local population had been previously observed in Cape May County. Field observations in the County had been conducted by the writer every summer since 1935 and during that period only a few individuals had been seen at rare intervals. The sudden increase in the autumn of 1939 is thus indicated as resulting from an invasion by one or more swarms from the South.

As mentioned by Blatchley†, *S. americana* is noted for its extended migrations. He describes a swarm which, coming from the southwest, invaded the city of Terre Haute. The present writer once observed a similar swarm which, in the autumn of 1917, invaded the town of Clarkesville, Tennessee,

* Now abandoned as a railroad junction.

† Orthoptera of northeastern America, 1920, p. 313.

and which was reported at other points between there and Hopkinsville, Kentucky. It is now widely accepted that certain species of grasshoppers which are normally stationary in their range, may at times pass into the swarming phase and migrate long distances beyond their normal habitat. Mr. Rehn informs me that some authorities consider *S. americana* to be the stationary phase of the extremely destructive *S. paranensis* (Burm.) and that, if this be true, no reason exists why the factors known to produce migratory types in other locusts may not operate in connection with *S. americana*. It therefore seems likely that local over-population in the latter may result in swarming conditions comparable with, though on a much smaller scale than, those witnessed in South America in the case of *S. paranensis*.

As an obvious test of the validity of the last suggestion, it would be interesting to know whether *S. americana*, coincident with its incursion into New Jersey, was unusually abundant in its normal breeding range. So far as the writer is aware, no information along this line has as yet appeared in print.

A List of the Dragonflies (Odonata) Taken in the Region of Muscongus Bay, Maine.

By Donald J. Borror, Department of Zoology and Entomology, Ohio State University.

During the summers of 1938 and 1939, while teaching insect study at the Audubon Nature Camp in Muscongus Bay, Maine, the writer had an opportunity to do some dragonfly collecting in this region (Lincoln and Knox counties). In the two summers 29 localities were visited; collections were made on 62 different days in the two summers.

Seventy species of Odonata have been taken, of which five are new for Maine: *Lestes eurinus* Say, *Enallagma laterale* Morse, *Libellula luctuosa* Burmeister, *Pantala flavescens* (Fabricius), and *Coenagrion resolutum* (Hagen), the last species being new for New England. These records bring the total number of Odonata recorded from Maine to 110 species (discounting doubtful records).

The writer wishes to acknowledge the assistance in collecting given him by students of the Audubon Nature Camp, a few of whom are mentioned below, and by Mr. Robert B. Wait, instructor in marine biology at the camp. He is indebted to Mr. Mike Wright of the Ohio State University for determining the nymphs and exuviae collected, and to Dr. E. M. Walker of the University of Toronto for determining *Coenagrion resolutum* (from camera lucida sketches).

COLLECTING LOCALITIES.

All of the localities in the following list are in Lincoln County, except 3, 8, and 19, which are in western Knox County. Locality names, unless otherwise indicated, are based on the topographic maps of the Monhegan, Waldoboro, and Wicasset quadrangles, published by the U. S. Geological Survey. The distances given are based on straight-line measurements on the map.

1. Back Meadow Brook, about 3½ miles northeast of Damariscotta and about a mile north of Little Pond.

2. Biscay Pond, southwest side, where it is drained by the Pemaquid River; this point is about 3½ miles southeast of Damariscotta.

3. Crystal Pond, near Martin, and about 1¾ miles southwest of Friendship.

4. Damariscotta Lake, east side at Morang Cove, about 5½ miles northwest of Waldoboro.

5. Damariscotta Pond, south end, about ½ mile west of Damariscotta Mills.

6, Dick's Pond. This pond (not named on the topographic map), is about a mile north of Hastings Pond (Locality No. 10) and about 2½ miles southwest of Round Pond.

7. Duckpuddle Pond, south end, about 3½ miles west-southwest of Waldoboro.

8. Dyer Long Pond, northeast end, about 4½ miles east-southeast of North Whitefield.

9. Forest Pond, about 1½ miles northwest of Friendship.

10. Hastings Pond, about 2½ miles north of New Harbor.

11. Hog Island, in the northern part of Muscongus Bay

just north of Muscongus Island. Collections were made in various parts of the island.

12. Keene Neck, a peninsula extending into Muscongus Bay north of Hog Island; about 8 miles south of Waldoboro.

13. Little Medomak Pond, about 7 miles north-northeast of Waldoboro.

14. McCurdy Pond, south end, about 4 miles east-southeast of Damariscotta.

15. Medomak Pond, southeast end, about 7 miles north of Waldoboro.

16. Monhegan Island, an island in the ocean several miles south of the mouth of Muscongus Bay.

17. Muscongus Island (swamp at north end), an island in Muscongus Bay, east of Round Pond.

18. Newcastle (a swamp about a mile northwest of town).

19. Newcastle (a pond on the south side of U. S. Route 1, about 3½ miles southwest of town).

20. North Pond, about 5 miles northeast of Waldoboro.

21. North Waldoboro (a small swamp about 1½ miles east-southeast of town), 6 miles north-northeast of Waldoboro.

22. Pemaquid Pond, north end just south of U. S. Route 1, about 4½ miles west of Waldoboro.

23. Pemaquid River, about a mile southeast of Bristol.

24. Pemaquid Sanctuary, along the road and marsh which separates Pemaquid Pond from McCurdy Pond, about 4 miles east-southeast of Damariscotta.

25. Pemaquid Sanctuary, east of the south end of Pemaquid Pond, about 4½ miles east of Damariscotta.

26. Pleasant Pond, about 10 miles north of Damariscotta Mills and 2¾ miles east-southeast of North Whitefield.

27. Seitensparker Pond, 3½ miles east of Waldoboro.

28. Webber Brook (not named on the topographic map), a stream running from the south end of Webber Pond to Muscongus Bay, about 2½ miles north of Round Pond.

29. Webber Pond, about 5½ miles southeast of Damariscotta.

(To be continued.)

Two New Lithobiid Chilopods from Burrows of the Florida Pocket Gopher.

By RALPH V. CHAMBERLIN, University of Utah,
Salt Lake City.

The material upon which the present paper is based formed part of a collection of arthropods taken from burrows of the pocket-gopher, *Geomys floridanus*, in connection with an investigation on the life history and habits of that animal initiated by the late Mr. C. C. Goff. The centipeds were transmitted to me for study by Prof. Theodore H. Hubbell of the University of Florida. Types are, for the present, retained in the author's collection.

Eulithobius hypogeus sp. nov.

General color light yellow, the head and more caudal tergites more or less darker.

Antennae moderately long, distally rather fine, composed commonly of 35-37 articles.

Prosternal teeth 5+5.

Ocelli in a rather small, narrowly elliptic patch, in a maximum of five, more or less irregular and oblique series; e. g., 5, 5, 5, 5, 4, no single ocellus being set off from the others; ocelli small and black.

Posterior angles of 6, 7, 9, 11 and 13 dorsal plates produced.

Coxal pores strongly transverse, in single series; e. g., 6 (5), 7, 9, 7.

Anal legs long and very slender; ventral spines 0, 1, 3, 2, 1; dorsal, 1, 0, 2, 1, 0; claw single. Ventral spines of penult legs, 0, 1, 3, 3, 1; dorsal, 1, 0, 3, 1, 1; claw single. Last three pairs of coxae laterally armed. Ventral spines of first legs, 0, 0, 2, 3, 1.

Claw of female gonopods tripartite, the lateral lobes small and blunt. Basal spines normally 3+3; but in the holotype one spine on the right gonopod is on the second article, only two being on the first article which on the left gonopod bears all three.

Posterior legs of male not specifically modified.

Length, 21 mm.

Locality.—FLORIDA: Melrose, Putman County, 2 Aug., and Nov. 13, 1939, one female on each date, B. A. Barrington, coll.;

Leesburg, four males collected by C. C. Goff; Gainesville, Alachua County, near Devil's Millhopper, Aug. 6, 1938, H. R. Wallace, coll.; Alachua Co., near Newman's Lake, June 28, 1938, and July 2, 1928, collected by H. R. Wallace.

This is the only species known from the United States belonging to this genus as now restricted.

PHOLOBIUS gen. nov.

Differs from *Lithobius* in having the fourth article of the anal legs in the male conspicuously modified, this in the genotype being inflated, excavated above and produced upward at the end distad of the excavation. In this modification it resembles *Anobius,* from which, however, it differs in having the prosternal teeth numerous and the articles of the antennae more numerous, typically 30, instead of being fixed at 20. Posterior angles of ninth, eleventh and thirteenth dorsal plates produced. Dorsal spines of anal legs typically 1, 0, 2, 1, 1.

Genotype.—*Pholobius goffi* sp. nov.

Pholobius goffi sp. nov.

Dorsum light brown, the head and antennae and the posterior legs darker, the other legs yellow.

Antennae short, composed of thirty mostly short articles; the ultimate article about equalling the two preceding taken together, the first and second longest.

Prosternal teeth, 4 4. Special ectal setae situated ectoproximad of the outermost tooth, dark, short and slenderly spiniform, not hair-like.

Ocelli, 1 6, 4, 4, 3, 2, the single ocellus relatively greatly enlarged.

Coxal pores uniseriate, round, arranged thus: 5, 6, 6, 3.

Ventral spines of anal legs, 0, 1, 3, 3, 1; dorsal, 1, 0, 2, 1, 1; the claw single. Ventral spines of penult legs 0, 1, 3, 3, 1; dorsal, 1, 0, 3, 1, 1; claw double, the accessory claw small. Dorsal spines of thirteenth legs, 1, 0, 3, 2, 2; ventral, 0, 1, 3, 3, 2. Ventral spines of first legs, 0, 0, 2, 3, 2; dorsal, 0, 0, 2, 2, 1. Last three pairs of coxae armed laterally, the last five dorsally.

Anal legs in male of moderate length, the third and fourth joints inflated, the fifth being abruptly more slender; fourth joint excavated above, rising dorsad distad of the excavation, the process bearing the caudally directed spine.

Length, about 12 mm.

Locality.—FLORIDA: Leesburg, Lake County. One male taken by C. C. Goff (No. 418) Mar. 21, 1938.

Corrections and Additions to "The Genotypes of the Chrysididae", (Hymenoptera).

By WILLIAM G. BODENSTEIN, Cornell University.

Since the publication of my paper[1] on the genotypes of the Chrysididae several changes and omissions have been noted. The genera *Eurychrysis* Bischoff, 1910 and *Hexachrydium* Bischoff, 1913 were inadvertently omitted from the manuscript and Miss Grace Sandhouse of the Bureau of Entomology and Plant Quarantine has kindly called my attention to the omission of *Pseudodichrysis* Trautmann, 1921. These genera should be inserted as follows:

EURYCHRYSIS Bischoff, 1910. Mitt. K. Zool. Museums, Berlin, IV, p. 445.

TYPE: *Eurychrysis stilbiceps* Bischoff, 1910. (Monobasic.)

HEXACHRYDIUM Bischoff, 1913. Gen. Insect Fasc. 151, p. 16.

TYPE: *Hexachrydium sexdentatum* (Buysson) [= *Hedychrydium sexdentatum* Buysson, 1898 = *Hexachrydium sexdentatum* (Buysson)]. (Monobasic.)

PSEUDODICHRYSIS Trautmann, 1921. Stettiner Ent. Zeit., LXXXII, p. 132.

TYPE: *Pseudodichrysis bihamata* (Spinola) [=*Chrysis bihamata* Spinola, 1838=*Chrysis* (*Dichrysis*) *bihamata* (Spinola)]. (Monobasic.)

Isogenotypic with *Dichrysis* Lichenstein, 1876, q. v.

Mr. V. S. L. Pate of Cornell University has found that the type of *Pyria* Lepeletier & Serville, 1828 was first designated by Smith, 1874, Trans. Ent. Soc. London, p. 464, instead of by Ashmead in 1902 as cited in my paper. Smith designated *Pyria lincea* (Fabricius, 1775) as type but mentioned *Pyria armata* Lepeletier & Serville, 1828 as a synonym of that species.

[1] Trans. Amer. Ent. Soc., LXV, pp. 123-133 (1939).

OBITUARY

Dr. Henry Clinton Fall died at Tyngsboro, Massachusetts, on November 14, 1939. An obituary notice by Prof. T. D. A. Cockerell appeared in *Science* for December 29, 1939, and others are announced for *Psyche, The Pan Pacific Entomologist* and the *Dartmouth Alumni Magazine*. He was born December 25, 1862, at Farmington, New Hampshire, and took the B. S. at Dartmouth in 1884, the College giving him the Sc. D. in 1929. Prof. Cockerell states that he described over 1400 new species of American Coleoptera, and that his entire collection of these insects goes to the Museum of Comparative Zoology at Harvard.

The death of Dr. Henry McElderry Knower on January 10, 1940, is announced in *Science* for January 19. While chiefly known for his work in vertebrate anatomy, in which subject he was professor at the Universities of Cincinnati (1910-1925), Georgia (1924-26) and Alabama (1926-29) and associate professor at the Albany Medical College (1930-32) and research fellow (1932-33) and associate (1933-37) in biology at Yale, he was the author of a detailed account of the early embryonic development of a termite (*Eutermes rippertii?*), published in the *Journal of Morphology* for 1900. He was born at Baltimore, Maryland, August 5, 1868, and received the Ph. D. from Johns Hopkins University in 1896.

Juan Mina Entomological Station

The Juan Mina Entomological Station is a new station of the Gorgas Memorial Laboratory. It lies just inside the Canal Zone-Panama-boundary and is located in an old orange grove on the opposite side of the Chagres River from the town of Santa Rosa. It will make fine headquarters for any problems to be studied in that group of towns, whether by the permanent or the visiting staff. The building has two bedrooms, a dining room, a long porch, a kitchen, pantry, shower bath and closet. Half of the space will be made into laboratory rooms. Screening and the installation of a kerosene refrigerator and a kerosene stove will make it possible and safe to live as well as work in the cottage—*Annual Report of the Gorgas Memorial Laboratory 1938*. Washington, Government Printing Office, 1939.

Current Entomological Literature

COMPILED BY V. S. L. PATE, L. S. MACKEY and E. G. FISHER.

Under the above head it is intended to note papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species will be recorded.

This list gives references of the current or preceding year unless otherwise noted. All continued papers, with few exceptions, are recorded only at their first installment.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

Note. References to papers containing new forms or names not so stated in titles are followed by (*); if containing keys are followed by (k); papers pertaining exclusively to neotropical species, and not so indicated in the title, have the symbol (S) at the end of the title of the paper.

The figures within brackets [ ] refer to the journal in which the paper appeared, as numbered in the list of Periodicals and Serials published in our January and June issues. This list may be secured from the publisher of Entomological News for 10c. The number of, or annual volume, and in some cases the part, heft, &c., the latter within ( )follows; then the pagination follows the colon :

Papers published in the Entomological News are not listed.

GENERAL.—Dicker, G. H. L.—Insects associated with cultivated forms of Rubus. [Trans. Soc. Brit. Ent.] 6:115-135. **Fernald, H. T.**—On type nomenclature. [7] 32: 689-702. **Horn, Walther.**—Obituary by A. Avinoff. [7] 32: 661-663, ill. Obituary by C. C. Hoffmann. [An. Inst. Biol. Mex.] 10: 373-375, ill. Obituary by A. D. Imms. [31] 144:857. **von Ihering, Rodolpho.**—Obituary by T. Borgmeier. [105] 10: 728-729, ill. **Karny, H.**—A la memoire du Prof. H. Karny, by F. Carpentier. [33] 79:399. **Macan, T. T.**—Notes on the migration of some aquatic insects. [Journ. Soc. Brit. Ent.] 2: 1-6. **Martorell, L. F.**—Methods of collecting and shipping Larra americana, a parasite of the Puerto Rican mole cricket. [7] 32: 703-712, ill. Insects observed in the state of Aragua, Venezuela, South America. [Journ. Agr. Univ. Puerto Rico] 23: 177-264. **Moon, H. P.**—Relationship between aquatic insect larvae and the food of fresh water fish. [Journ. Soc. Brit. Ent.] 2:13. **Post, R. L.**—Preserving insect specimens and preparing material for display. [69th Ann. Rep. Ent. Soc. Ont.] 1938: 115-119. **Schmidt, C. T.**—Musings of an armchair philosopher. [37] 10: 255-259. **Whitfield, F. G. S.**—Air transport, insects and disease. [22] 30: 365-442, ill.

ANATOMY, PHYSIOLOGY, ETC.—De Bach, P.—A hormone which induces pupation in the common house fly, Musca domestica. [7] 32: 743-746. **Behrendt, R.**—Unter-

suchung uber die wirkungen erblichen und nichterblichen fehlens bzw. nichtgebrauchs der flugel auf die flugmuskulatur von Drosophila melanogaster. [94] 152: 129-158, ill. **Carlson, J. G.**—Immediate effects of 250 R of X-Rays on the different stages of mitosis in neuroblasts of the grasshopper Chortophaga viridifasciata. [Jour. Morph.] 66: 11-23, ill. **Dumbleton, L. J.**—Contribution to the physical ecology of Tortrix postvittana (Lep.) [22] 30: 309-319. **Fraser, F. C.**—The evolution of the copulatory process in the order Odonata. [107] A, 14: 125-129, ill. **Green, W. R.**—The significance of the theory of heredity of the reduction in the number of body segments in Drosophila melanogaster through rigorous selection. [Journ. Morph.] 66: 67-97, ill. **Guareschi, C.**—La morfologia della cromatina delle ghiandole salivari di Chironomus plumosus in rapporto ad esperienze chimico-fisiche. [Boll. Zool. Italiana] 10: 109-114. **Harries, F. H.**—Some temperature coefficients for insect oviposition. [7] 32: 758-776, ill. **Hering, M.**—Die Peritrophischen Hullen der Honigbiene mit besonderer Berucksichtigung der Zeit wahrend der Entwicklung des imaginalen Darmes. [89] Abt. Anat., 66; 129-190, ill. [**Hilton, W. A.**]—[Nervous system and sense organs] LXXXI: Coleoptera. [13] 31: 50-71, ill. **James, H. C.**—Further studies on the reproductive methods of certain species of Coccidae (Hemiptera). [36] 89: 569-577, ill. **Jentsch, S.**—Vergleichend entwicklungsbiologische und okologische Untersuchungen an einheimischen Psocopteren unter besonderer Berucksichtigung der Art Hyperetes guestfalicus. [89] Abt. Syst., 73: 1-46, ill. **Johnson, C. G.**—Taxonomic characters, variability and relative growth in Cimex lectularius and C. columbarius (Hemip: Cimicidae). [36] 89: 543-568, ill. **Leeson, H. S.**—Longevity of Anopheles maculipennis race atroparvus, at controlled temperature and humidity after one blood meal. [22] 30: 295-301. **Malcolm, M. C.**—Recent cytological studies in saw-fly parthenogenesis. [Advance. Sci., Lond.] 1:46. **Marquardt, F.**—Beitrage zur Anatomie der Muskulatur und der peripheren Nerven von Carausius (Dixippus) morosus. [89] Abt. Anat., 66: 63-128, ill. **McClung, C. E.**—The apical cell of the insect testis—a possible function. [Contr. Zool. Laby. Univ. Penna.] 36: 437-444, ill. **Pflugfelder, O.**—Beeinflussung von regenerationsvorgangen bei Dixippus morosus durch exstirpation und transplantation der Corpora allata. [94] 152: 159-184, ill. **Robinson**

& Wilson.—Changes in the concentration of urease during pupal development of the blowfly Phormia regina. [Jour. Parasit.] 25: 455-459, ill. **Schulze, K.**—Die Hautdrusen der Odonaten. Hautdrusen als begattungshilfsorgane bei mannlichen Agrioniden. [89] Abt. Anat., 66: 55-62, ill. **Slifer, E. H.**—The internal genitalia of female Acridinae, Oedipodinae, and Pauliniinae (Orth., Acridid.). [Journ. Morph.] 65: 437-469, ill. The internal genitalia of female Thrinchinae, Batrachotetriginae, Pamphaginae and Pyrgomorphinae (Orth.: Acridid.). [Journ. Morph.] 66: 175-185, ill. **Stefanelli, A.**—Sul comportamento dei colloidi nucleari delle ghiandole salivari di Chironomus plumosus. Esperienze di micromanipolazione combinate con esperienze chimico-fisiche. [Boll. Zool. Italiana] 10: 149-161, ill. **Varley, G. C.**—On the structure and function of the hind spiracles of the larva of the beetle Donacia (Coleo: Chrysomel.). [107] A, 14: 115-122, ill. **Wigglesworth, V. B.**—'Visual adaptation' among Lepidoptera, observations and experiments by F. Suffert. [107] A: 14: 111-112. **Williams, J. L.**—The occurrence of spermatophores and their measurements in some British Lepidoptera. [Trans. Soc. Brit. Ent.] 6: 137-148, ill.

ARACHNIDA AND MYRIOPODA.—Michelbacher, A. E.—Further notes on Symphyla with descriptions of three n. sp. from California. [7] 32: 747-757, ill. (*). **Petrunkevitch, A.**—The status of the gen. Eurypelma (Araneae, Theraphrosidae). [75] 4: 561-568, (k*).

THE SMALLER ORDERS OF INSECTS.—Aubrook, E. W.—A contribution to the biology and distribution in Great Britain of Boreus hyemalis (Mecoptera). [Journ. Soc. Brit. Ent.] 2: 13-21, ill. **Clay & Meinertz-Hagen.**—Three n. genn. of Mallophaga from Charadriiformes. [75] 4: 450-454, ill., (k). **Fraser, F. C.**—[Odonata] See under Anatomy. **Hood, J. D.**—New North American Thysanoptera, principally from Texas. [105] 10: 550-619. **Jentsch, S.**—Die Gattung Ectopsocus (Psocoptera). [89] Abt. Syst., 73: 111-128, ill., (S*). **Marshall, A. C.**—A qualitative and quantitative study of the Trichoptera of western Lake Erie (as indicated by light trap material). [7] 32: 665-668, ill. (k). **Mosely, M.**—Leptonema pallidum Guerin (Trichoptera). [75] 4: 310-314, ill. **Sakimura, K.**—On the host plants of some Hawaiian Thrips. [37] 10: 251-254.

ORTHOPTERA.—Hatcher, E.—The consortes of certain North Carolina blattids. [Jour. E. Mitchell Sci. Soc.] 55: 329-334. **Karny, H. H.**—Genera Insectorum. Fasc. 206. Fam. Gryllacrididae. Subfam. Omnes. 317 pp., ill. **Liebermann, J.**—Catalogo sistematico y biogeografico de Acridoideos Argentinos. [104] 10: 125-230. **Slifer, E. H.**—See under Anatomy.

HEMIPTERA.—Barber, H. G.—A new bat bug from the eastern United States (Cimicid.). [10] 41: 243-246, ill. (*). **Bueno, J. R. de la Torre.**—See under Special. **China, W. E.**—On the generic nomenclature of certain Homoptera, with a note on the status of family names. [75] 4: 582-587. **Drake, C. J.**—Seven new South American Tingitidae. [105] 10: 525-530. **Drake & Frick.**—Synonymy and distribution of the Lantana Lace Bug (Tingit.) [37] 10: 199-202, ill. **Johnson, C. G.**—See under Anatomy. **Piza S. de Toleda, jr.**—Dois novos Ploiariideos do Brasil. [105] 10: 619-622, ill. **Squire, F. A.**—Observations on cotton stainers (Dysdercus) in the West Indies. [22] 30: 289-292, ill. **Sulc, K.**—Description of a new Psyllid from Greenland. [75] 4: 78-81, ill. **Usinger, R. L.**—A n. gen. of Pacific Island Enicocephalidae with n. spp. from the Hawaiian and Philippine Islands. [37] 10: 267-270, ill. Distribution and host relationships of Cyrtorhinus (Miridae). [37] 10: 271-273.

LEPIDOPTERA.—Bourquin, F.—Metamorfosis de Phthorimae euchthonia (Gelechiidae). [105] 10: 637-640, ill. **Bryk, F.**—Uber ein wichtiges verschollenes Werk von Fabricius. [Verh. VII Internat. Kongr. Ent.] 1: 535-539. **Dufrane, A.**—Lycaenidae. [33] 79: 289-292. **Eller, K.**—Fragen und Problem zur Zoogeographie und zur Rassen— und Artbildung in der Papilio machaon-Gruppe. [Verh. VII Internat. Kongr. Ent.] 1: 74-101, ill. **Hayward, K. J.**—N. spp. of Neotropical Hesperiidae. [105] 10: 517-525, ill. **Hoffmann & Vazquez.**—Una especie nueva de synopsia de las Montanas altas del centro de Mexico (Geometridae). [An. Inst. Biol. Mex.] 10: 335-341, ill. (*). **Klots, A. B.**—Brenthis aphirape in North America, with a new record of the sp. from Maine (Nymphal.) [19] 34: 259-264. **McDunnough, J.**—A new Coenonympha race from northeastern New Brunswick. [4] 71:266. N. spp. of Geometridae with notes, II. [4] 71: 249-258, ill. **Paskevsky, V.**—Nouvelles formes d'Agrias de la collection de Mme. G. Fournier de Horrack. [25] 44: 36-40, ill. (S). **Reich, P.**—Die

Barenspinner von Sudbrasilien. Faunistische Mitteilungen aus meiner Sammlung. [17] 56: 77-81. **Sperry, J. L.**—Two apparently new Geometrids from the southwest. [4] 71: 262-262. **Testout, H.**—Contribution a l'etude des Lepidopteres Saturnioides (VI). [Bull. Soc. Linn. Lyon]. 8: 232-233, (S*). **Warnecke, G.**—Uber die taxonomische Bedeutung der Genitalarmatur der Lepidopteren. [Verh. VII Internat. Kongr. Ent.] 1: 461-481, ill. **Watkins, W. T. G.** A new Satyrid butterfly [from Venezuela]. [75] 4:160. **Williams, C. B.**—Some records of butterfly migration in America. [107] A, 14: 139-144, (S). **Zikan, J. F.**—Die arten der Papilio protesilaus-Gruppe. [17] 56: 45-48; 116-118, ill. (Sk).

DIPTERA.—Alexander, C. P.—Records and descriptions of Tipulidae from tropical America, Pt. 2 [105] 10: 622-637, ill. (*). **Blanton, F. S.**—The abundance of Tabanidae as revealed by one season's survey at Babylon, N. Y. [6] 47: 311-314. Collecting notes on the fam. Asilidae. [19] 34: 229-235. **Boyce, H. R.**—A note on the parasitism of the leaf miner, Agromyza melampyga. [4] 71:267. **Hall, D. G.**—Two new species of Tachinidae parasitic upon hemlock sawfly larvae in North America (Tachinid.). [10] 41: 239-243. (*). **Krober, O.**—Beitrage zur Kenntnis der Conopiden. [75] 4: 362-395; 454-468; 525-544; 594-607; ill. (k*). **Lindner, E.**—Uber einige bemerkenswerte Konvergenzen im System der Stratiomyiiden. [Verh. VII Internat. Kongr. Ent.] 1: 236-239. **Lopes, H. de Souza.**—Contribuicao ao conhecimento do genero Helicobia (Sarcophag.). [105] 10: 497-517, ill. (S*). **Mesnil, L.**—Nouvelles suggestions sur la classification des Larvaevoridae. [Verh. VII Internat. Kongr. Ent.] 1: 319-328, ill. (k). **Parent, O.**—Dolichopodides des Iles Hawaii recuellis par M. F. X. Williams, principalement au cours de l'annee 1936. [37] 10: 225-249, ill. (k*). **Sabrosky, C.**—A summary of family nomenclature in the order Diptera. [Verh. VII Internat. Kongr. Ent.] 1: 599-612. **Scotland, M. B.**—The lemna fly and some of its parasites (Ephydrid.). [7] 32: 713-718. **Shewell, G. E.**—New North American spp. of Homoneura (Lauxaniid.). [4] 71: 264-266. **Townsend, C. H. T.**—The spp. of the supergenus Paratheresiae. [105] 10: 546-549, (Sk*). **Williams, F. X.**—Biological Studies in Hawaiian Water-Loving Insects. Pt. III: Diptera or Flies. B. Asteiidae, Syrphidae and Dolichopodidae. [37] 10: 281-315, ill.

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SPECIAL NOTICES.—The Generic Names of British Insects. Pt. 6: The generic names of the British Carabidae, with a check list of the British species [by H. E. Andrewes]. pp. 153-192. A Synopsis of the Hemiptera-Heteroptera of America north of Mexico. Pt. I: Families Scuteller dae, Cydnidae, Pentatomidae, Aradidae, Dysodiidae and Termitaphididae. By **J. R. de la Torre Bueno.** [70] 19: 141-304, ill., (k).

Fossil Orthoptera Ensifera by Frederick Eberhard Zeuner. British Museum (Natural History) 1939. 2 volumes (one of text, one of plates).—This splendidly illustrated work in which Zeuner sums up the knowledge of the fossil Ensifera is in reality a monumental enterprise. The extensive information regarding localities at which Ensifera have been collected, which of necessity include most of the known insect-bearing formations of the Mesozoic and later periods, and his account of the various historical collections studied are of interest to all those interested in paleoentomology. After a brief statement of the relationships of the Orthopteroid orders, the Paleozoic Saltatoria are discussed and their evolution into the Acridioids, Gryllacridoids and Prophalangopsoids summarized. Then begins his treatment of the true Ensifera in which the phylogeny of the various subsidiary groups is discussed in some detail. The relationship between fossil and recent forms, and probable lines of development is thoroughly investigated. In this connection he has made a detailed study, particularly of the wing venation and other morphological structures of

phylogenetic importance. One might add that, due to the present chaotic state of the classification of this group, it was necessary for him to make many extensive and detailed examinations of modern forms. Particularly in the Gryllacrididae and Prophalangopsidae has considerable revisionary investigation been undertaken. Since attempting the present study much labor has been spent by the author in organizing and increasing our knowledge of the groups within the Tettigoniidae, as is indicated by several of his latest papers. The systematic portion of the study includes the classification and descriptions of 157 species of fossil Ensifera. Most of the forms are fully illustrated by both photographs and line drawings, including some colored diagrams. This work contains 120 pages on phylogeny, followed by 174 pages of systematic descriptions and an extended bibliography of 16 pages. The volume of plates includes 49 plates of line drawings and diagrams and 31 plates of photographs.—J. W. H. REHN.

Apateticus ludovicianus Stoner, A synonym of Andrallus spinidens (Fabricius) (Heteroptera: Pentatomidae).

On pages 462 to 463 of ENTOMOLOGICAL NEWS for December, 1917 (Volume 28), I described "A New Apateticus from Louisiana." Some time thereafter, one of my correspondents wrote that the form described by me appeared to be *Andrallus spinidens* (Fabr.) and on further study I arrived at the same conclusion. Recently another worker called this matter to my attention.

Since I have heretofore made no public or formal statement regarding this situation, I now offer the present note by way of withdrawing the name *Apateticus ludovicianus* from the literature and relegating it to the status of a synomym for *Andrallus spinidens* (Fabr.). DAYTON STONER, New York State Museum, Albany, New York.

A Substitute Name for Bion Rehn, 1937 (Orthoptera).

It has been brought to my attention that the blattid generic name *Bion*, proposed by me in 1937 (Trans. Amer. Entom. Soc., LXIII, p. 252), for *Bion mastrucatus*, is preoccupied by *Bion* Cambridge, 1898, in Arachnida (Biol. Cent.-Amer., Arachnida, I, p. 244). To replace my preoccupied name I here propose **Bionoblatta.**—JAMES A. G. REHN.

EXCHANGES

This column is intended only for wants and exchanges, not for advertisements of goods for sale or services rendered. Notices not exceeding three lines free to subscribers.

These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and, only when necessary those at the top (being longest in) are discontinued.

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Lucanidæ of the world. Will determine, exchange or purchase. Desire especially neotropical material for revisional work. Bernard Benesh, Box 159, North Chicago, Ill.

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Wanted.—Nitidulidae for determination or exchange. Correspondence desired with those who will collect. H. R. Dodge, 78 Anne Street, Clintonville, Wisconsin.

Wanted.—To hear from specialists who would care to determine some family of insects for a share of the duplicates. We have many specimens, especially in some families of Diptera and Hymenoptera. H. E. Jaques, Iowa Insect Survey, Mt. Pleasant, Iowa.

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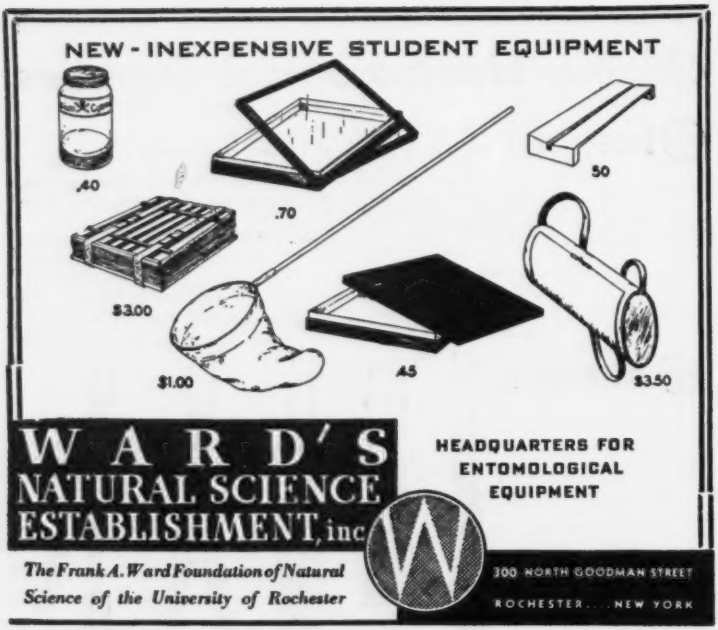

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